

NEW WEST INDIAN MEGACHILE.¹

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The following new species were found partly in a series of *Megachile* collected in Cuba by Dr. George Salt during the winter and spring of 1925, and partly in some unidentified material in the collection of the Museum of Comparative Zoology at Cambridge.

***Megachile bahamensis* n. sp.**

♀. Head very broad, eyes slightly converging below, pubescence fuscous; supraclypeal plate almost impunctate medially, with only a few scattered punctures; clypeus coarsely and irregularly punctate, rather sparsely so in the center, apical margin polished and impunctate, somewhat thickened and very slightly incurved; mandibles broad, irregularly and very sparsely punctate above, 5-dentate, the two apical teeth approximate, and the three inner ones approximate, the second and third widely separated and with a cutting edge between them which ends abruptly just before the subapical tooth; cheeks narrow, shining, finely punctate, carinate on posterior margin; vertex flat, shining, with a few larger scattered punctures interspersed with more numerous smaller ones which are more shallow and indistinct; lateral ocelli about equally distant from eyes and edge of vertex; front sparsely punctate just below ocelli, but closely and finely punctate between antennæ; antennæ blackish above, pale brownish beneath with a slight violet tinge, the middle joints slightly longer than broad.

Thorax entirely bare above, pubescence at sides and behind brownish, becoming fuscous below; mesonotum shining, with large scattered punctures, almost impunctate medially; scutellum impunctate medially, with scattered punctures laterally, posterior margin broadly triangular; pleura closely and finely

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punctured above, more coarsely and sparsely so below; propodeum very finely and closely punctured laterally, more sparsely so posteriorly; tegulae piceous, finely punctured, the punctures widely separated; wings pale fuliginous, more strongly so apically and along costa, nervures testaceous, basal nervure much beyond transverse median, second recurrent nervure entering second submarginal cell slightly nearer apex than the first does to the base; legs black, black pubescent, that on the tarsi beneath and on the mid tarsi without, with somewhat of a fuscous tinge; middle metatarsi almost as broad as their tibiae and the hind metatarsi fully so; spurs reddish-testaceous; claws testaceous basally, ferruginous apically, with short but distinct basal teeth.

Abdomen cordate, shining, segments with but few scattered punctures apically, but more numerous on basal portions of discs, bare of pubescence above, the concavity of the first segment peculiar in having a longitudinal sharp ridge dividing it into two separate concavities; segment 6 but very slightly concave at sides viewed from above, practically straight in profile, the surface hidden by fine appressed brownish pubescence, which contrasts rather strongly with the otherwise black abdomen; scopa entirely black; apical ventral segment with a free polished apical lip which projects slightly beyond the scopa. Length 11 mm.

Type: Female (Type No. 15716, Mus. Comp. Zool.); Mangrove Cay, Andros, Bahamas, Aug. 1, 1904 (Allen, Barbour and Bryant, collectors).

This is close to *M. maura* Cress. but differs in the color of the pubescence, in the double punctation of the vertex, and in the peculiar ridged condition of the concavity of the first abdominal segment. In *maura* the pubescence is deep black, the vertex has only a few scattered punctures and no evidence of double punctation and the basal concavity is normal.

***Megachile poeyi alleni* n. subsp.**

♂. Head broad, eyes slightly converging below, pubescence mostly white, short and blackish on vertex; clypeus closely punctured, apex beneath beard entire, shining; mandibles 4-

dentate, apical portion reddish except the teeth, very finely punctate, rounded on outer margin viewed from above, inferior tooth basal; cheeks about as broad as eyes, punctures shallow and indistinct, densely pubescent on lower angle, thinly so above; vertex flat, deeply punctured, the punctures close behind ocelli, otherwise well separated; lateral ocelli slightly nearer edge of the vertex than to nearest eye; front below ocelli very densely punctured; antennæ long, the joints fully twice as long as wide, piceous above, red below, apical joint not much modified.

Thorax very densely and finely punctured above, the punctures coarser and well separated on pleura below, sparse on the sternum, pubescence whitish on the sides, behind and beneath, apparently black on mesonotum (specimen rubbed) with large anterior patches of dense pale pubescence, and probably margined laterally and behind with dense pubescence of the same color in fresh specimens; tegulæ piceous, very densely and finely punctate; wings fuliginous, nervures brownish to testaceous, second recurrent nervure entering the second submarginal cell somewhat nearer apex than first does to base.

Legs piceous, all the tarsi ivory color; front coxæ with rather stout but flattened spines, front trochanters reddish-testaceous beneath; front femora strongly keeled beneath apically, the punctate portion of the posterior face much reduced, confined largely to the apical half of the femur, with a short sharp carina on upper margin at center, ferruginous, the lower margin at the keel ivory color, the upper face reddish-testaceous, polished, antero-inferior face also polished, paler testaceous, margined at sides with ferruginous and with a median longitudinal stripe of the same color extending from the base about half way to apex; outer face of front tibia piceous and punctate, the posterior margin carinate, the other two faces polished and testaceous, the anterior one more reddish; anterior tarsi broadly dilated, the basal joint only slightly longer than wide, hollowed out anteriorly, the two anterior margins fringed with short yellowish pubescence, the remaining joints gradually narrowed to tip, the fifth not dilated but quite flat and parallel-sided, very slightly darker apically; tarsal fringe white, brownish apically, largely

brownish beneath, second joint with a large black spot beneath; middle and hind tarsi not dilated but distinctly ivory colored.

Abdomen somewhat parallel-sided, finely and closely punctured, black pubescent, the pubescence of segment 1 entirely white, and segments 1-5 with entire white apical fasciæ; segment 6 with dorsal surface vertical in position, rugoso-punctate above the carina, the carina with a conspicuous rounded emargination, otherwise entire, apical margin slightly carinate on either side of middle, and with a small but sharp lateral tooth on each side beyond the carina; four ventral segments visible, these shining and sparsely punctured. Length 9 mm.

♀. Head broad, eyes slightly converging below; supra-clypeal plate and clypeus coarsely punctate, rather sparsely so medially, the clypeus with an impunctate median line, the apical margin slightly denticulate, pubescence very thin and pale; mandibles broad, reddish apically, sparsely punctate above, conspicuously 4-dentate, a straight cutting edge between the two inner teeth, and another between the two middle teeth, the latter ending abruptly about half way between them; cheeks narrow, closely punctate and quite densely pubescent, the pubescence yellowish-white; vertex flat, deeply punctured, the punctures well separated, pubescence black; lateral ocelli much nearer the edge of the vertex than to the nearest eye; front below ocelli densely punctate; antennæ piceous above, red below, the middle joints slightly longer than broad; pubescence yellowish-white on face, some short inconspicuous black hairs on supraclypeal area.

Thorax black pubescent above, pale ochraceous at sides, below and behind; mesonotum finely punctate, punctures separate medially, close laterally and posteriorly, with two lateral anterior patches of dense ochraceous pubescence, a spot of the same color just back of the tegulæ, and the scutello-mesothoracic suture lined with it; scutellum long black pubescent across middle, with short dense pale pubescence behind, finely and rather closely punctate; pleura closely and finely punctate above, more coarsely and sparsely so below; propodeum granular, punctures indistinct; tegulæ black, closely and finely punctate; wings pale fuliginous, somewhat darker apically, nervures yellowish brown, the second recurrent nervure entering the second

submarginal cell nearer apex than the first does to base; legs piceous, all the tarsi ferruginous, pubescence whitish, yellow on all the tarsi beneath and on the middle metatarsi without; spurs pale yellow; claws testaceous basally, ferruginous apically, with sharp basal teeth.

Abdomen ovoid, finely and closely punctured, black pubescent, the pubescence on the first segment entirely pale ochraceous, and segments 1-5 with entire and conspicuous apical fasciæ of pale ochraceous pubescence; segment 6 rather distinctly concave at sides viewed from above, straight in profile, with greyish appressed pubescence, that on the basal middle dark brown, with rather short black erect hairs at sides basally; scopa white, black on segment 6, with a considerable amount of black at sides of segment 5, and with a small amount at sides of segments 4 and 3; apical ventral segment with a free polished apical lip which projects slightly beyond the scopa. Length 11 mm.

Type: Male (Type No. 15715, Mus. Comp. Zool.); Mangrove Cay, Andros, Bahamas, Aug. 1, 1904. Allotype; topotypical (Allen, Barbour and Bryant, collectors).

This is probably only a subspecies of *M. poeyi* Guer. from which it differs as follows: The male is smaller (11 mm. in *poeyi*) and the legs above the tarsi are piceous (bright red in *poeyi*); the pubescence on the disc of segment 2 is entirely black, whereas in *poeyi* it is entirely ochraceous, and the pale pubescence is nearly white, while in *poeyi* it is strongly ochraceous; in the female the apical margin of the clypeus is less strongly denticulate and the vertex is somewhat less closely punctured than in *poeyi*, and the bright red legs of the latter at once distinguish it from this form; and there is considerably more black pubescence in the scopa of the subapical segment in *poeyi*, being black almost entirely across the segment apically.

***Megachile salti* n. sp.**

♀. Head broad, eyes converging slightly below, vertex broad and flat; supraclypeal plate shining and bare, finely tessellate, impunctate medially, closely punctate laterally; clypeus with a rather broad impunctate median area, but rather closely

punctate laterally, apical margin slightly concave medially, with a slight median tubercle, pubescence white with a faint ochraceous tinge, and with a few long black hairs laterally; mandibles broad, 4-dentate, the third tooth truncate, almost impunctate and tinged with red above, with fine close punctures at base in front, with a distinct line above leading from the incision between the two apical teeth almost to the base; cheeks very narrow, carinate posteriorly, rather finely punctate, and entirely white pubescent; vertex very short, sparsely punctate, being almost impunctate between the eyes and ocelli, with conspicuous, rather long, erect black pubescence; ocelli much nearer edge of vertex than to nearest eye; front below ocelli closely punctate, with mixed black and white pubescence; antennæ black above, more piceous below; pubescence white on inner orbits, and around and between the antennæ.

Thorax mostly white pubescent below and at sides; mesonotum sparsely punctured medially, more closely so around the margin, rather dull, pubescence black in general, but pale ochraceous anteriorly, with two conspicuous anterior oblique lines of white pubescence, and a very conspicuous line of short whitish appressed pubescence in the suture between the mesonotum and scutellum, reaching across from one tegula to the other; scutellum finely and closely punctured, with pubescence entire y black, contrasting with the white pubescence just below on the narrow metanotal plate and propodeum; pleura rather closely punctured, white pubescent, but with a round spot of black pubescence just beneath the wings; propodeum tessellate, with scattered very fine punctures, basal triangle impunctate, tessellate; tegulæ blackish, finely punctured, with a tuft of white pubescence in front; wings subhyaline, slightly infuscated apically, nervures blackish, basal nervure beyond transverse median, second recurrent nervure entering second submarginal cell nearer apex than the first does to base; legs white pubescent, that on the tarsi beneath brownish; all the coxæ black, trochanters black to obscure red, all the femora and tibiæ bright red, all the tarsi deep black, contrasting strongly with the tibiæ and femora, hind metatarsi very broad and rather short; claws yellowish basally,

ferruginous apically, without distinct basal teeth; spurs pale yellow.

Abdomen cordate, flattened above, the segments not very deeply impressed basally and not at all apically, finely punctate, shining, with short black pubescence on the discs except on segment 1 where it is long and white; segments 1-5 conspicuously white fasciate, all the fasciæ entire, but rather narrow basally; segment 6 slightly concave at sides viewed from above, also slightly concave in profile, with appressed, very dark brown pubescence, and with scattered erect black hairs basally; scopa pure white, mostly black on segment 6, and black at extreme sides of segments 3-5.

Length 10 mm.

♂. Head broad, much as in the female, pubescence dense and ochraceous; clypeus closely punctured, densely pubescent, with a considerable amount of black hair above and at sides, apical margin beneath the beard smooth and shining, broadly emarginate or incurved medially; mandibles 4-dentate, shining above, with a few scattered black hairs in front, inferior tooth subbasal, rather small, sharply pointed; cheeks and vertex as in the female, the cheeks simple below (not excavated nor toothed); antennæ long, the joints more than twice as long as wide, black above, more piceous below; pubescence somewhat longer on vertex than in the female.

Thorax with pubescence arranged as in the female, but rather longer above; tegulæ and wings as in the female; legs much as in the female, but the femora suffused with blackish basally; front coxæ black, thinly pubescent in front, with flattened curved pointed spines of moderate length; front tarsi simple, with hardly any fringe, with long mixed black and white hairs; front tibiæ with black pubescence on outer face; pubescence on front tarsi beneath brownish, pale yellowish on the middle and hind tarsi beneath, legs otherwise white pubescent.

Abdomen somewhat narrowed posteriorly, shining, punctures very fine and rather sparse; pubescence long and pale on segment 1, black on discs of segments 2-4, segments 3 and 4 with basal fasciæ, 5 broadly appressed pubescent basally, the pubescence pale ochraceous, the surface otherwise with rather long

erect black hairs; apical fasciæ poorly developed, represented by mere tufts of whitish pubescence at extreme sides of segment 1, and widely interrupted on segments 2-4; segment 5 without an apical fascia; segment 6 with a low inconspicuous carina, which is broadly, shallowly and evenly emarginate medially, otherwise entire, the segment above the carina with ochraceous appressed pubescence and scattered long erect black hairs; morphological apex of segment carinate on either side of the middle, the carina low and inconspicuous, extending to the lateral teeth which are vestigial; segment 7 pointed; venter with three unmodified visible segments, which are fringed with white hair apically, the fourth segment visible, but membranous and transparent, considerably modified from the usual condition. Length 8 mm.

Type: Female (Type No. 15706, Mus. Comp. Zool.); Soledad, Cuba, May 22, 1925. Allotype; Mina Carlota, Trinidad Mts., Cuba, 1500 ft. altitude, on flowers of *Neurolæna limbata*, March 25, 1925. Paratypes: 2 females; Mina Carlota, March 25, on *Neurolæna*; 1 female, Soledad, June 1, on flowers of *Parkinsonia aculeata*; 1 female, Soledad, June 20, on flowers of *Psidium cattleianum*; 2 males, Mina Carlota, March 25, on *Neurolæna*, and 1 male, Soledad, June 20. All of the series collected by Dr. George Salt. Two of the paratype males, one from each of the localities cited, vary from what has been designated as the type form in having entirely black legs, and with the pubescence more nearly pure white.

In general form, and in structure of the clypeus, mandibles, cheeks and vertex in both sexes, and in the form of the apical abdominal segment in the male, this species closely resembles *M. petulans* Cress. to which it is evidently very closely related. The cheeks are slightly narrower than in *petulans* however, and the clypeus is less strongly and closely punctured in the female. In the male the carina of segment 6 is much less deeply emarginate, and the fourth ventral segment is modified. The color of the pubescence and the red femora and tibiæ at once distinguish them, however. Of the Cuban species, this superficially resembles *M. poeyi* Guér. but here again the color of the legs will serve to distinguish them.

***Megachile carlotensis* n. sp.**

♂. Facial quadrangle much longer than wide, densely ochraceous pubescent; clypeus closely and finely punctured, apical margin smooth and shining, slightly incurved; mandibles 4-dentate, obscurely reddish apically, otherwise black, inferior tooth triangular in shape, submedian, somewhat nearer base of mandible than to apex; cheeks broad, closely punctured, carinate posteriorly; vertex considerably extended behind eyes, flat, closely and quite deeply punctate posteriorly, an impunctate area on either side of the lateral ocelli, and a small oval impunctate area between them, the posterior margin of the vertex definite but hardly carinate; ocelli considerably nearer eyes than to edge of vertex; antennæ not especially long, the joint being hardly twice as long as wide, the apical joint dilated and somewhat flattened; pubescence of face and clypeus ochraceous, tinged with red on vertex, some short black hairs above eyes on vertex, pubescence short and white on middle of cheeks, cheeks below with large patches of pale fulvous hair, and the inferior angle just below with long dense white pubescence, while just behind the inferior mandibular tooth is a small excavation densely covered with pale ochraceous pubescence, and the gular region back of this has long dense pale ochraceous pubescence.

Thorax with pubescence ochraceous above, paling to white below, a patch of fuscous pubescence in center of mesonotum; mesonotum strongly and closely punctured; scutellum with a median longitudinal impunctate area, with strong punctures on either side, but not so closely punctured as the mesonotum, with hair all pale; pleura closely punctured; propodeum shining behind, where it is almost bare, laterally minutely roughened and quite densely pubescent, basal triangle tessellate and impunctate; tegulæ piceous, minutely punctate, pubescent basally and anteriorly; wings fuliginous, considerably darker apically, violaceous, nervures ferruginous, basal nervure beyond transverse median, second recurrent nervure entering second submarginal cell nearer apex than the first does to base; hind wings hyaline.

Middle and hind coxæ, trochanters and femora black, the

tibiæ bright ferruginous, the tarsi yellowish-ferruginous; middle tibia without the usual spur, the metatarsus as long as the tibia, narrow, somewhat curved, and densely yellowish pubescent exteriorly; hind tibia with spurs pale yellow, the metatarsus short, and rather thick and wide; front coxæ black, bare in front, thinly pubescent behind, and with a dense patch of white pubescence on outer side, with short flattened triangular pointed spines and with a patch of red bristles to one side and in front of the spines; trochanters black, fringed posteriorly with pale hairs, and with considerable black pubescence intermixed apically; front femora reddish-yellow, piceous above on apical third, sharply keeled beneath on slightly more than the apical half, pubescence whitish, pale ochraceous basally, and with a few black hairs below at extreme base; front tibiæ ferruginous, shining and deeply punctate on outer face, where the pubescence is short, sparse and pale yellow, the two inner faces polished and more yellowish, a fringe of short reddish pubescence on the edge between these two faces; spur large, hollowed out, reddish-yellow; front tarsi enormously dilated, pale yellow to whitish, the second joint somewhat longer than the first at base, but the first expanded and lengthened into a large hollow scale in front, the second produced as far as the tip of the metatarsal scale, but not much lengthened, the third with a small process in front, the fourth small, the second and third joints are not hollowed out but merely expanded anteriorly; the tarsal joints are fringed behind with long pale ochraceous hair, this tipped within with dark brown; anteriorly the first joint has a fringe of long reddish-brown stiff hair, and the inner margin of the scale has a short paler fringe; the second and third joints are covered within with reddish-brown bristles, and the second joint has also a definite fringe of reddish-yellow pubescence at the tip exteriorly; all the claws are ferruginous basally, piceous apically, the second and third pair deeply cleft, those on the front legs with a rudimentary inner tooth.

Abdomen oblong, parallel-sided, shining, punctures distinct but rather fine, well separated; segments 1 and 2 with rather long ochraceous pubescence, a few black hairs on the second apically; segments 3 and 4 with black pubescence on the discs

and with conspicuous basal ochraceous fasciæ; segment 5 covered, except the apical margin, with ochraceous appressed pubescence and with scattered erect pale hairs; none of the segments with apical fasciæ except at extreme sides of segments 2-4; segment 6 finely rugoso-punctate, the carina low and inconspicuous, broadly emarginate, so that the two teeth are all that is left, the segment above the emargination bare, on either side the surface covered with dense appressed ochraceous pubescence, morphological apex of the segment slightly carinate at the sides and with small lateral apical teeth; segment 7 broadly rounded, flat below, carinate apically, the carina projecting very slightly beyond the sixth segment medially; venter with four visible segments, the first three fringed behind with white hair, the fourth with an ochraceous apical fringe. Length 11.5 mm.

Type: Male (Type No. 15705, Mus. Comp. Zool.); Mina Carlota, Trinidad Mts., Cuba, 1500 ft. altitude, on flowers of *Neurolæna limbata*, March 25, 1925 (Geo. Salt, coll.).

Although the superficial resemblance is very slight, due to the color of the pubescence and legs, this insect is very similar in structure to *M. xylocopoides* Sm. and *M. morio* Sm., especially to the latter. It seems hardly possible that this can be the male of *M. maura* Cress. which belongs to the *xylocopoides-morio* group, although it was caught at the same time and place as females of *maura*. *M. sedula* Sm. belongs to this same group, however, and the color of the pubescence and of the scopa suggests the possibility that this is the male of that species. *M. sedula* is recorded from St. Domingo, but may possibly occur on the island of Cuba. If this is not *sedula* it is at least a close relative.

Records of other species of *Megachile* in this series follow:

***Megachile maura* Cress.**

6 ♀ ♀ : Mina Carlota, near Cienfuegos, Cuba, March 21-24, at *Neurolæna*.

***Megachile poeyi* Guér.**

7 ♂ ♂, 15 ♀ ♀ : Mina Carlota, March 22-25; La Milpa (near Cienfuegos, at practical sea level), June 24 and July 4; Soledad, February 14, 22 and 23, April 6 and 10, June 9-29: on flowers of *Neurolæna limbata*, *Vernonia neuthæfolia*, *Psidium cattleianum* and *Casaria aculeata*.